

inside breadth of the space at each end and at each point of division of the length. Number the breadths successively “1”, “2”, and so forth beginning at the bow.

(4) Multiply the even numbered breadths by four and the odd numbered breadths by two, except the first and last, which are multiplied by one.

(5) Add together the products under paragraph (c)(4) of this section and multiply the sum by one-third of the interval between the points at which the breadths are taken. The product is the square foot area of the space at mid-height.

(6) Multiply the area of the space at mid-height by the average of the heights taken each point of division of the space. The product divided by 100 is the tonnage of that space.

(7) The between-deck tonnage is the sum of the tonnage of each level within the between-deck space.

§ 69.113 Superstructure tonnage.

(a) *Defined.* “Superstructure tonnage” means the tonnage of all permanent structures, such as forecastle, bridge, poop, deckhouse, and break, on or above the line of the uppermost complete deck (or line of shelter deck, if applicable).

(b) *Method of calculating tonnage.* The tonnage of all structures on each level on or above the uppermost complete deck (or shelter deck, if applicable) is calculated separately as follows:

(1) The length of each structure is measured along its centerline at mid-height between the line of the inboard face of the framing on one end to the line of the inboard face of the framing on the other end. (See § 69.123, figure 11.)

(2) Divide the length under paragraph (b)(1) of this section into an even number of equal parts most nearly equal to those into which the tonnage length is divided under § 69.109.

(3) Measure at mid-height the inside breadth at each end and at each point of division of the length. Number the breadths successively “1”, “2”, and so forth, beginning at the extreme forward end of the structure. If an end of the structure is in the form of a continuous arc or curve, the breadth at that end is one-half the nearest breadth. If

an end is in the form of an arc or curve having a decided flat, the breadth at the end is two-thirds of the nearest breadth.

(4) Multiply the even numbered breadths by four and the odd numbered by two, except the first and last breadth, which are multiplied by one.

(5) Add together the products under paragraph (b)(4) of this section and multiply the sum by one-third of the interval between the points at which the breadths are taken. The product is the square foot area of the structure at mid-height.

(6) Multiply this area by the average of the heights taken at each point of division of the structure between its decks or the line of its decks. The product divided by 100 is the tonnage of that structure.

(c) A structure having steps in its deck or side must be measured in parts.

(d) The superstructure tonnage is the sum of tonnages of each level above the line of the uppermost complete deck (or shelter deck, if applicable).

(e) When a structure is located over a cut-away portion of the tonnage deck, the structure's height is measured from the under side of its overhead deck to the line of the tonnage deck. If the tonnage deck has no camber, allow for camber in the overhead deck.

(f) For structures of a standard geometric shape, a simple geometric formula that yields an accurate volume may be used.

§ 69.115 Excess hatchway tonnage.

(a) Hatchways that are above the tonnage deck and are either open to the weather or within open structures are measured to determine excess hatchway tonnage. Hatchways that are in between-deck spaces, on decks within closed-in structures, or on open structures are not measured.

(b) The tonnage of a hatchway is its length times breadth times mean depth divided by 100. Mean depth is measured from the under side of the hatch cover to the top of the deck beam.

(c) From the sum of the tonnage of the hatchways under this section, subtract one-half of one percent of the vessel's gross tonnage exclusive of the hatchway tonnage. The remainder is

added as excess hatchway tonnage in calculating gross tonnage.

§ 69.117 Spaces exempt from inclusion in gross tonnage.

(a) *Purpose.* This section lists spaces which are exempt from inclusion in gross tonnage.

(b) *Spaces on or above the line of the uppermost complete deck.* The following spaces or portions of spaces on or above the line of the uppermost complete deck are exempt if the spaces or portions are reasonable in extent and adapted and used exclusively for the purpose indicated:

(1) Spaces for anchor gear, including capstan, windlass, and chain locker, are exempt.

(2) Companions and booby-hatches protecting stairways or ladderways leading to spaces below are exempt, whether or not the spaces below are exempt.

(3) Galley or other spaces fitted with a range or oven for cooking food to be consumed on board the vessel are exempt.

(4) Spaces designed to provide light or air to propelling machinery are exempt, as follows:

(i) When propelling machinery is located entirely on or above the line of the uppermost complete deck, the entire propelling machinery space and all fuel bunker spaces that are also located above that line are exempt as light or air spaces. (See exception in § 69.121(d)(1) for framed-in spaces.)

(ii) When part of the propelling machinery projects above the line of the uppermost complete deck into a space used exclusively to provide light or air to the propelling machinery, the entire space is exempt as light or air space. When any portion of this space is used for purposes other than providing light or air, only the portion of the space used for light or air, the space occupied by the propelling machinery itself, and a propelling machinery working space allowance under § 69.121 limited to two feet, if available, on each side of the propelling machinery are exempt.

(iii) Any part of an escape shaft, or a companion sheltering an escape shaft, above the line of the uppermost complete deck is exempt as light or air space.

(iv) Space that would otherwise be exempt as a light or air space is not exempt when propelling machinery is boxed-in and does not extend above the line of the uppermost complete deck. Any portion of the boxed-in space above the line of the uppermost complete deck is exempt.

(5) Skylights affording light or air to a space below, other than to propelling machinery spaces. Space immediately below the line of the deck on which a skylight is located is exempt only when there is an opening in the next lower deck directly below the skylight to permit light or air to an even lower deck.

(6) Machinery spaces, other than for propelling machinery under § 169.121.

(7) Spaces for steering gear.

(8) Water closet spaces that are fitted with at least a toilet and are intended for use by more than one person.

(9) The space in a wheelhouse necessary for controlling the vessel.

(c) *Passenger spaces.* (1) As used in this section, the term "passenger" includes officers and enlisted men on military vessels who are not assigned ship's duties and not entered on the ship's articles.

(2) As used in this section, "passenger space" means a space reserved exclusively for the use of passengers and includes, but is not limited to, berthing areas, staterooms, bathrooms, toilets, libraries, writing rooms, lounges, dining rooms, saloons, smoking rooms, and recreational rooms. The space need not be part of or adjacent to a berthing area to be considered a passenger space.

(3) A passenger space located on or above the first deck above the uppermost complete deck is exempt from gross tonnage.

(4) A passenger space located on the uppermost complete deck is exempt from gross tonnage only when it has no berthing accommodations and is an open structure under paragraph (d) of this section.

(d) *Open structures.* (1) Structures that are located on or above the line of the uppermost complete deck that are under cover (sheltered) but open to the weather are exempt from gross tonnage.